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Waste-to-energy machine reveals power of trash

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Danielle Davis
danielle.davis@bayonetandsaber.com

Fort Benning is helping the Army test a new product that could one day change not only how forward operating bases get rid of their waste, but also how they make use of it.

The Battalion-scale Waste to Energy Conversion Green Energy Machine came to Fort Benning as the result of a partnership with Infoscitex and MSW Power.

"We've got a good working relationship with them. They call us about a lot of projects. This one is unique because it's a closed loop system. It runs off the product that you put into it," said Peter Lukken, the Sustainability manager for the Garrison. "Something like this has never been done before, at least, not on this scale. And not one that produces this little pollution to the environment," he continued.

Mark Fincher, the energy manager of the Directorate of Public Works Business Operations Division, explained that all the trash being used to test the BWEC GEM comes from Fort Benning.

By using the BWEC GEM, Fort Benning is not only reducing the amount of waste it sends to the landfill but its carbon footprint, he said.

Matt Young, vice president and director of Engineering at MSW Power, has been working on the BWEC GEM project for 10 years.

He explained that the BWEC GEM is a waste to energy system that has three major units: a preprocess that converts the trash into a pellet, then a thermal process to break down the solid fuel pellet into a flammable gas, then that gas can be used in an engine as fuel to produce electricity. This thermal treatment system is called gasification.

According to Young, the BWEC GEM was designed to process three tons of trash daily. Once processed, that trash becomes 100 gross kilowatts. Out of those 100 gross kilowatts, the BWEC GEM needs 26 to operate leaving 74 net kilowatts for Fort Benning to use.

"The end goal of a product like this is to be put into the combat theater to support battalion-scale base operations to take the waste that they are producing and convert it into electricity for the base. That way they will save on diesel costs and then reduce the weight of their waste by 95 percent," he said.

Young explained that instead of having a large mass of waste around, the forward operating bases would get a small pile of ash that is essentially harmless and can be put into the ground.

This is a much more environmentally friendly way to get rid of the waste while making a good use of it, he added.

George Steuber, the deputy garrison commander, explained that having a system that can take all these different types of waste and produce energy out of them would be beneficial to the U.S. forward operating bases.

Those working on forward operating bases could also do away with a lot of obstacles that come along with off site disposal of waste with this system, he said.

When the U.S. goes places, it tries not to pollute. By having a system like this makes it a cleaner operation for everyone involved while helping preserve the environment in other countries, Steuber added.